

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

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In the Matter of)	
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Telecommunications Relay Services and)	CG Docket No. 03-123
Speech-to-Speech Services for Individuals)	
with Hearing and Speech Disabilities)	
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)	
Petition for Declaratory Ruling and/or)	CG Docket No. 05-231
Rulemaking on Live Closed Captioning)	
Quality Metrics and the Use of Automatic)	
Speech Recognition Technologies)	
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COMMENTS OF THE CLEAR2CONNECT COALITION

ACCSES
American Association of People with
Disabilities (AAPD)
American Network of Community Options
and Resources (ANCOR)
American Veterans (AMVETS)
Association of University Centers on
Disabilities (AUCD)
Blinded Veterans Association
Code of Support Foundation

Council of State Administrators of Vocational
Rehabilitation (CSAVR)
Dixon Center
Home Care Association of America
National Coalition for Homeless Veterans
The National Council on Independent Living
(NCIL)
National Disability Rights Network
Paralyzed Veterans of America (PVA)
United Spinal Association
VetsFirst
The Viscardi Center
World Institute on Disability (WID)

September 25, 2019

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COMMENTS OF CLEAR2CONNECT COALITION

The Clear2Connect Coalition (“Coalition” or “Clear2Connect”) submits these comments to address several pending actions before the FCC that could involve the increased use of automatic speech recognition (“ASR”) technologies to provide services to individuals with hearing loss and other hearing- and speech-related disabilities. Specifically, we address the recent Public Notices seeking comment on three applications for certification to provide Internet Protocol Captioned Telephone Service (“IP CTS”) and waiver of certain Commission rules.¹ The Coalition urges the Commission to defer ruling on these applications until it establishes adequate standards for ASR-only services and an appropriate framework for evaluating compliance with these standards. We

¹ Application of Clarity Products, LLC, for Internet-based TRS Certification, CG Docket No. 03-123 (June 5, 2019), (“Clarity Application”); Application of MachineGenius Inc. for Internet-based TRS Certification, CG Docket No. 03-123 (Oct. 13, 2017) (“MachineGenius Application”); Application of VTC Secure, LLC for Internet-based TRS Certification, CG Docket No. 03-123 (May 26, 2017) (“VTC Secure Application”).

also support a related petition requesting a rulemaking to adopt quality metrics for ASR technologies for live closed captioning.²

I. The Coalition Represents Those Who Are Deaf and Hard of Hearing.

The Clear2Connect Coalition³ is a group dedicated to advancing the right—established by the Americans with Disabilities Act—of Americans with hearing loss to access the technology they need to communicate using a phone. We are a diverse range of organizations that advocate for the rights of the D/deaf and Hard-of-Hearing communities. Our membership includes organizations representing people with various disabilities, aging advocacy groups, and—because hearing loss so commonly results from military training and combat—numerous veterans’ service organizations.⁴

² Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI), National Association of the Deaf (NAD), Hearing Loss Association of America (HLAA), Association of Late-Deafened Adults (ALDA), Cerebral Palsy and Deaf Organization (CPADO), Deaf Seniors of America (DSA), Deaf/Hard of Hearing Technology Rehabilitation Engineering Research Center (DHH-RERC), Twenty-First Century Captioning Disability and Rehabilitation Research Project (Captioning DRRP), Rehabilitation Engineering Research Center on Universal Interface & Information Technology Access (IT-RERC), and National Technical Institute for the Deaf, Petition for Declaratory Ruling and/or Rulemaking on Live Closed Captioning Quality Metrics and the Use of Automatic Speech Recognition Technologies, CG Docket No. 05-231 (July 31, 2019) (“Consumer Groups Petition”).

³ The Coalition is comprised of ACCSES, American Association of People with Disabilities (AAPD), American Network of Community Options and Resources (ANCOR), American Speech-Language Hearing Association (ASHA), America’s Warrior Partnership, American Veterans (AMVETS), Association of University Centers on Disabilities (AUCD), Blinded Veterans Association, Code of Support Foundation, Council of State Administrators of Vocational Rehabilitation (CSAVR), Dixon Center, Easterseals DC MD VA, Home Care Association of America, National Coalition for Homeless Veterans, The National Council on Independent Living (NCIL), National Disability Rights Network, National Minority Quality Forum, Paralyzed Veterans of America (PVA), RespectAbility, United Spinal Association (VetsFirst), The Viscardi Center, and World Institute on Disability (WID).

⁴ These veterans’ service organizations include: America’s Warrior Partnership, American Veterans (AMVETS), United Spinal Association (VetsFirst), Blinded Veterans Association, Code of Support Foundation, Dixon Center, Easterseals DC MD VA, National Coalition for Homeless Veterans, and Paralyzed Veterans of America (PVA).

Americans with hearing loss depend on assistive technologies like captioned phone service and closed captioning to communicate with family and friends and engage in community life. Without access to reliable and accurate assistive technologies, these consumers face unnecessary discrimination, stigmatization, underemployment, and isolation. Their inability to participate fully in the job market inflicts great economic losses to them and society, and the obstacles to fully communicating with their friends and loved ones impose a cost that cannot be measured.

The stories highlighting the benefits of IP CTS are many. Mr. Robert Richardson, for example, served as a member of the United States Army in Vietnam, where he was frequently exposed to heavy-duty weaponry and high explosives. This experience accelerated the hearing loss that had begun in his childhood. For many years, IP CTS has enabled Mr. Richardson to live a life of independence, remaining connected to his family, friends, and community despite his hearing loss.

Mr. Harry Viezens, who has experienced hearing loss his entire life because of complications at birth, was unable to use a phone for many years. He ran a successful business but could not talk to customers on the phone. Today, because of IP CTS, his business is more successful than ever because he can deal more directly with customers. IP CTS enables him to communicate directly with his customers, as a hearing business owner would, allowing him to develop relationships and close sales.

Because IP CTS is indispensable for Mr. Richardson, Mr. Viezens, and many other Americans who are deaf or hard of hearing, ensuring the high accuracy and clarity of this service is critical. Approving ASR-only services prematurely, without further developing quality standards, threatens the ability of Mr. Richardson, Mr. Viezens, and so many others to continue to

live productive, connected, and independent lives—a right that hearing Americans have the luxury to take for granted.

II. It Is Premature to Certify Any ASR-Only IP CTS Provider.

The Coalition supports technology advancements and looks forward to the day when ASR-only technology is ready to handle all types of calls. But ASR is not ready to do so today. As the Coalition and the Consumer Groups have previously explained,⁵ the Commission is putting the cart before the horse by proposing to approve ASR-only providers before it has adopted performance standards, an effective evaluation framework, and requirements for financial and technical capabilities.

Standards. The Commission should adopt the performance standards that we and others have proposed⁶ because standards are crucial for maintaining the quality of services that individuals dependent on IP CTS receive. These critical standards include benchmarks for quality—which includes accuracy, speed, and synchronicity—privacy, emergency capabilities, and resilience for IP CTS providers. The ability of a service to meet all these standards can literally be a matter of life or death for our members, as even missing one word can invert the whole meaning of a sentence: “You do not need to take your medication” may turn into “You do need to take your medication.” We also encourage the Commission to ensure safeguards for consumer privacy and adopt a privacy framework. Indeed we are particularly concerned given the recent

⁵ Ex Parte Letter from The Clear2Connect Coalition to Marlene H. Dortch, Secretary, FCC, CG Docket Nos. 03-123 and 13-24 (May 14, 2019) (“Clear2Connect Ex Parte”); Letter from Blake E. Reid, Counsel to Telecommunications for the Deaf and Hard of Hearing, Inc., to Marlene H. Dortch, Secretary, FCC, GC Docket Nos. 03-123 and 13-24, at 2 (July 26, 2018) (“Consumer Groups Letter”); see also *In re Misuse of Internet Protocol (IP) Captioned Telephone Service and Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Report and Order, Declaratory Ruling, Further Notice of Proposed Rulemaking, and Notice of Inquiry, 33 FCC Rcd 5800 (2018).

⁶ Clear2Connect Ex Parte at 9-10; Consumer Groups Letter at 3-5.

reports of recording of what are private conversations.⁷ Even though ASR-only technology purports to be human-free, ASR-only services have used people to train the ASR software. In a threat to our members' privacy, these companies have recorded calls and their employees have listened to such calls, correcting the ASR-created captions.⁸

Additional standards are necessary because the current minimum standards are insufficient for determining whether ASR-only IP CTS providers are capable of delivering quality service. Currently, for instance, the rules call for providers to “automatically and immediately transfer the caller to an appropriate Public Safety Answering Point” for an emergency call.⁹ But because the rules focus only on whether the provider has connected the caller, they do not guarantee the quality of the emergency call once connected. There is no way to assess, for example, whether a hearing-challenged person can communicate with a 911 operator after the call is put through. It is similarly unclear how the minimum standards, which currently address human-based services, would apply to automated ones.¹⁰

⁷ Clear2Connect Ex Parte at 3-4.

⁸ See Matt Day, Giles Turner, & Natalia Drozdiak, *Amazon Workers Are Listening to What You Tell Alexa*, Bloomberg (Apr. 10, 2019), <https://www.bloomberg.com/news/articles/2019-04-10/is-anyone-listening-to-you-on-alexa-a-global-team-reviews-audio>.

⁹ 47 C.F.R. § 64.604(a)(4).

¹⁰ See Letter from Telecommunications for the Deaf and Hard of Hearing, Inc., the Hearing Loss Association of America, and the Gallaudet University Technology Access Program, to Marlene H. Dortch, Secretary, FCC, CG Docket Nos. 03-123 and 13-24, at 4 (May 25, 2018) (“[T]he Declaratory Ruling’s approach of delegating to the Bureau the responsibility of applying the existing TRS minimum standards to IP CTS applicants proposing to use ASR does not acknowledge that the minimum standards are replete with explicit references to human communications assistants (CAs) and provides little guidance as to how the Bureau should evaluate compliance with those standards by machine-learning algorithms.”).

We remain concerned even though the Commission has conducted limited testing of ASR through its contractor, MITRE.¹¹ In our view, the testing was not thorough enough, failed to include a sufficient testing size, and used only male voices.¹² The Commission should perform additional testing to address these shortcomings before certifying any provider to offer ASR-only service. Only then will it avoid potential consumer harm to deaf and hard of hearing users that depend on the service.

Evaluation framework. To make sure that these standards work in practice, the Commission should adopt our evaluation framework to ensure ASR-only IP CTS is as effective as current IP CTS offerings *before* certifying any ASR-only provider. In particular, the Commission should test IP CTS providers' ability to meet the new standards in a variety of different calling situations, from 911 calls with emergency services to calls with individuals with different vernaculars and dialects. The Commission should also investigate when ASR-only providers are recording calls and what they are doing with those recordings. Only careful evaluation of an applicant's ability to meet detailed standards will ensure that all providers—whether ASR-only or using communications assistants (“CAs”)—are able to provide quality services to those who are deaf or hard of hearing in all types of situations.

Financial and technical capabilities. In addition to performance standards, the Commission should ensure that providers are financially and technologically sound to avoid

¹¹ See MITRE Corp., *Internet Protocol Caption Telephone Service (IP CTS) – Summary of Phase 2 Usability Testing Results* (Mar. 23, 2016), <https://ecfsapi.fcc.gov/file/10411287298464/MITRE%20Corporation%20Summary%20of%20Phase%202.pdf>.

¹² See Letter from John T. Nakahata, counsel to CaptionCall, LLC, to David Schmidt, TRS Fund Program Coordinator, Office of Managing Director, FCC, CG Docket Nos. 03-123, 13-24 Attach. 1 (Dec. 21, 2017); Letter from David A. O'Connor, Counsel for Hamilton Relay, Inc., to Marlene Dortch, Secretary, FCC, CG Docket Nos. 13-24, 03-123 at 2 (May 24, 2018); Clear2Connect Ex Parte at 11.

potentially harming the deaf and hard of hearing.¹³ As it has done in other areas,¹⁴ the Commission should ensure that ASR-only providers have the ability to properly serve disabled, aging, or veteran communities who are deaf or hard of hearing by asking applicants for financial statements and demonstrated technical abilities. If unqualified providers are allowed to sign up vulnerable consumers, they may leave deaf and hard of hearing individuals in very difficult—and potentially dangerous—situations when a vital service ceases working with no warning.

Pilot ASR Program. The Commission should not allow an ASR-only provider to enter the market based on only testing that the provider itself performed and a small number of demonstrations under controlled and perfect conditions. If the Commission declines to wait until performance standards for IP CTS are in place before certifying ASR-only providers, it should, at a minimum, subject each provider's service to testing by volunteer users and Commission staff to ensure that it is capable of satisfying the FCC's rules and delivering functional equivalence. While we believe it is premature to move forward with any certification of an ASR-only provider, the Commission could conduct a limited pilot program to allow a small number of volunteer users and Commission staff to evaluate prospective ASR-only providers' services on a trial basis. For instance, the Commission could set aside a certain number of minutes for a one-year pilot program. Providers with pending applications could be granted pilot program certifications to provide only those minutes. Over the course of the year, volunteer users and FCC staff would use those minutes and collect data to test the services to determine if they (1)

¹³ See *In re Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 5949 (2016); *In re Connect America Fund*, Report and Order and Order on Reconsideration, 32 FCC Rcd 1624 (2017).

¹⁴ The Commission has asked for similar types of information in the Phase II Auction of the Connect America Fund. See FCC, *Connect America Fund Phase II Auction (Auction 903)* (last updated Aug. 26, 2019), <https://www.fcc.gov/auction/903>.

match existing IP CTS in terms of service quality and 911 call routing and (2) satisfy other FCC requirements. This approach could build on the FCC’s successful pilot programs for other TRS,¹⁵ and could expose flaws that should prevent certification or even conditional certification of a provider in the first place.¹⁶

Specific applications. Because the needed standards and evaluation framework do not yet exist, it is premature to certify the applications from VTCSecure, MachineGenius, and Clarity Products at this time. The three applications do not address the concerns that the Clear2Connect Coalition and the Consumer Groups have identified. They tout the benefits of ASR-only technology, but glide over its potential pitfalls. VTCSecure’s application, for example, says that its system can function properly “[u]nder ideal conditions” and even when a user is “talking fast.” But what about when a user speaks quickly with an accent? Or quickly with business-specific jargon?¹⁷ None of the three applications discusses how their ASR-only systems will handle complex and varied calling situations that our members may experience.

Before approving these three applications, the Commission should first adopt the proposed performance standards and evaluation framework to ensure that the ASR-only providers are offering functionally equivalent services to our communities.

¹⁵ *In re Structure and Practices of the Video Relay Service Program*, Report and Order and Further Notice of Proposed Rulemaking, CG Docket Nos. 10-51, 03-123, FCC 19-39 (2019) (proposing to make VRS at-home pilot program permanent).

¹⁶ See, e.g., *Misuse of Internet Protocol (IP) Captioned Telephone Service*, Order, 30 FCC Rcd 2934 (CGB 2015); *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Order, 29 FCC Rcd 13,716 (CGB 2014).

¹⁷ VTCSecure Application at 3.

III. The Coalition Supports the Pending Petition for Rulemaking to Adopt Service Quality Metrics for ASR for Live Closed Captioning.

The Clear2Connect Coalition supports the Consumer Groups’¹⁸ Petition for Rulemaking to Address ASR-Only Technology for Live Television Closed Captioning.¹⁹ The Commission should initiate a rulemaking to adopt service quality standards for closed captioning of live programming because, as with IP CTS, quality standards must be in place *before* major changes in technologies occur.

The Consumer Groups have identified concerns about ASR-based closed captioning services similar to those for ASR-only IP CTS. As a result, the Groups have urged the Commission to initiate a rulemaking into the closed captioning techniques and how the varying dimensions of caption quality (including accuracy, synchronicity, completeness, and placement) affect the accessibility of video programming. We agree. The Commission should adopt standards that assess whether live television closed captioning—whether ASR or non-ASR—provides quality access to the deaf and hard of hearing.²⁰ As with IP CTS, standards for closed captioning will ensure that the aging, the disabled, and veterans who are deaf and hard of hearing will be able to watch any programming regardless of the captioning technology used.

¹⁸ The Consumer Groups are comprised of the Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI), National Association of the Deaf (NAD), Hearing Loss Association of America (HLAA), Association of Late-Deafened Adults (ALDA), Cerebral Palsy and Deaf Organization (CPADO), Deaf Seniors of America (DSA), Deaf/Hard of Hearing Technology Rehabilitation Engineering Research Center (DHH-RERC), Twenty-First Century Captioning Disability and Rehabilitation Research Project (Captioning DRRP), Rehabilitation Engineering Research Center on Universal Interface & Information Technology Access (IT-RERC), and National Technical Institute for the Deaf.

¹⁹ See Consumer Groups Petition.

²⁰ Consumer Groups Petition at iv.

The Commission’s lack of standards in the past has led to widespread problems with closed captioning. Before the 2014 Closed Captioning Quality Order, for instance, the Commission’s sole reliance on market forces to police quality led to problems in closed captioning.²¹ The Commission acknowledged that the resulting quality problems were so bad that they “threatened [the] safety” of people who are deaf or hard of hearing.²² Even after the 2014 Quality Order, problems persist. Individuals still encounter missing captions, poor accuracy, missing speaker identification, captions that are out of sync, and programs that are not captioned at all.²³

To make sure these problems do not happen again, the Commission should adopt quantifiable, objective standards to ensure that consumers with hearing disabilities receive effective captions of live television programming. These standards would apply across technologies and focus on the quality of output—as opposed to the processes used to create the captions. Adopting these requirements will facilitate Commission oversight, promote competition, and protect consumers.

CONCLUSION

IP CTS has been a critical life-changing service for older Americans, veterans, and others with hearing loss. To ensure these individuals receive the technical assistance they deserve and the law requires, the Commission should develop standards for both IP CTS and closed captioning for live programming contexts. Individuals like Mr. Richardson and Mr. Viezens depend on such assistive technologies to connect with the outside world, to make a living, and to participate fully in our society. The Clear2Connect Coalition urges the Commission to refocus its efforts to develop

²¹ Clear2Connect Ex Parte at 3.

²² *In re Closed Captioning & Video Description of Video Programming*, Second Report and Order, 15 FCC Rcd 6615, 6619-20, 6623-24, ¶¶ 10, 16 (2000).

²³ Consumer Groups Petition at 10-11.

service quality standards before approving the pending applications from VTCSecure, MachineGenius, and Clarity Products for ASR-only IP CTS.

Respectfully submitted,

/s/ Loretta Herrington

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